

ABSTRACT

An image-based tele-presence system forward warps video images selected from a plurality fixed imagers using local depth maps and merges the warped images to form high quality images that appear as seen from a virtual position. At least two images, from the images produced by the imagers, are selected for creating a virtual image. Depth maps are generated corresponding to each of the selected images. Selected images are warped to the virtual viewpoint using warp parameters calculated using corresponding depth maps. Finally the warped images are merged to create the high quality virtual image as seen from the selected viewpoint. The system employs a video blanket of imagers, which helps both optimize the number of imagers and attain higher resolution. In an exemplary video blanket, cameras are deployed in a geometric pattern on a surface.

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